Message

From: Calvino, Maria Soledad [Calvino.Maria@epa.gov]
Sent: 10/24/2018 11:31:47 PM
To: Herrera, Angeles [Herrera.Angeles@epa.gov]; LEE, LILY [LEE.LILY@EPA.GOV]
CC: Fairbanks, Brianna [Fairbanks.Brianna@epa.gov]; Manzanilla, Enrique [Manzanilla.Enrique@epa.gov]; Chesnutt, John [Chesnutt.John@epa.gov]
Subject: RE: Draft EPA response FW: SF Chronicle inquiry Fwd: questions about Building 606 and Tetra Tech C

Kelly has reviewed and approved. Will send to reporter now. Thanks!

Soledad Calvino
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From: Herrera, Angeles
Sent: Wednesday, October 24, 2018 4:23 PM
To: LEE, LILY <LEE.LILY@EPA.GOV>
Cc: Fairbanks, Brianna <Fairbanks.Brianna@epa.gov>; Calvino, Maria Soledad <Calvino.Maria@epa.gov>; Manzanilla, Enrique <Manzanilla.Enrique@epa.gov>; Chesnutt, John <Chesnutt.John@epa.gov>
Subject: Re: Draft EPA response FW: SF Chronicle inquiry Fwd: questions about Building 606 and Tetra Tech C

Enrique is ok with the response. Please go head and share it with 19th floor. Thxs

Sent from my iPhone

On Oct 24, 2018, at 2:49 PM, LEE, LILY <LEE.LILY@EPA.GOV> wrote:

> Thanks Brianna for your legal review and approval of this language.
>
> Enrique, Angeles has reviewed and approved this language. She will bring you a hard copy printout to your office for your review when she sees you soon.
>
> From reporters yesterday:
>
> Hi Soledad,
>
> We need to confirm one more thing with you. The snapshot of air sampling data that we did receive from RSY2 was presented as <10% DAC for Alpha and Beta. Just wanted to confirm with you that Derived Air Concentration is a safety limit used for workers in the nuclear power industry and would have been appropriately applied to workers at RSY2, who were also knowingly working with radiological materials.
>
> We need this confirmed by tomorrow, if at all possible. Thank you,
>
> Cynthia and Jason
>
> DRAFT EPA RESPONSE: Yes, the Derived Air Concentration (DAC) is a safety limit used for workers in the nuclear power industry. At the Hunters Point Naval Shipyard, using 10% of the

DAC as a screening level would be consistent with protective screening levels in a EPA Superfund context for the most common alpha and beta sources.

More technical discussion from Lily:

The DAC standard uses dose, whereas EPA Superfund uses risk. EPA's health physicist ran the EPA PRG calculator for Ra-226 and Sr-90. Ra-226 is the most common alph emitter at Hunters Pt and comprises > 90% of the known radiological concern at the site. Sr-90 is the most common beta emitter. The PRG calculator shows that 10% of DAC would be associated with 10^-13 risk. But I don't think we need to get into that level of detail for reporter.

Background info from Techlaw:

A Derived Air Concentration (DAC) is defined as the concentration of a given radionuclide in air which, if breathed by the reference man for a working year of 2,000 hours under conditions of light work (with an inhalation rate of 1.2 cubic meters of air per hour), results in an intake of one annual limit on intake (ALI).

The Annual Limit on Intake (ALI) is the concentration limit for a specific radionuclide ingested or inhaled that will result in no more than 5,000 mrem/yr whole body committed effective dose equivalent (CEDE), or 50,000 mrems to any individual organ or tissue as a committed dose equivalent (CDE). ALI values for intake by inhalation of selected radionuclides are found in Table 1 of Appendix B to 10 CFR Part 20, "Standards for Protection Against Radiation" and are intended to apply to the nuclear worker.

Limiting exposure to workers at HPNS to 10% of the DAC would mean limiting the amount of radionuclide(s) inhaled to a concentration that would result in no more than a CEDE of 500 mrem/yr whole body, or a CDE 5,000 mrem/yr to any organ or tissue. A percentage of the DAC was apparently used for the RSY pads because it was a promulgated standard.

Use of the DAC and ALI limits is consistent with the Nuclear Regulatory Commission (NRC) regulations in 10 Code of Federal Regulations (CFR) Section 20 Subpart C – Occupational Dose Limits, § 20.1201 Occupational Dose Limits for Adults.

EPA's Preliminary Remediation Goal (PRG) Calculator for Radionuclides may be used to estimate the risk to workers at the RSY pads if radionuclide-specific air monitoring data is available, in order to determine if using a 10% DAC results in risk that falls within the EPA CERCLA risk range of 10E-04 – 10E-06. However, none of the air monitoring data specified radionuclides.